



Article

An Interdisciplinary Study of Early Mediaeval Churches in North-Western Spain (Galicia)

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Received: 3 January 2019; Accepted: 4 February 2019; Published: 12 February 2019



Abstract: Over the last five years, the EMCHAHE (Early Medieval Churches: History, Archaeology and Heritage) Project has analysed the architecture, archaeology and history of numerous rural churches of the High Middle Ages in Galicia (NW Spain), through its historical, stratigraphic and chronological study. As a result, the knowledge of this historical period has been broadened and even changed, as well as an interdisciplinary methodology on how to approach this type of study. According to the results obtained, the project has allowed us to reflect on two issues, the potential of a relatively low-cost type of study to understand, assess and disseminate this type of heritage and the special appreciation and ownership that local communities have towards these churches as an engine of sustainable social development.

Keywords: rural heritage; rural churches; early mediaeval heritage; Middle Ages

1. Introduction

This work aims to discuss a key element of the heritage of North-Western Spain consisting of rural churches, and in particular, early mediaeval churches, based on the knowledge generated in a research project. The Project in question is "Early Medieval Churches: History, Archaeology and Heritage" (hereinafter, EMCHAHE), funded with an Action Marie Curie Career Integration Grant (PCIG12-GA-2012-334068) from the European Research Agency (European Commission, "People" Program of the "Frame Program 7") in its 2012 call for bids and developed between 2013 and 2017. Its objective has been to learn more about the societies of the High Middle Age in Galicia through studying one of its main historical, archaeological and artistic manifestations, churches. For this, the EMCHAHE project is based on a strongly interdisciplinary perspective which combines the use of archaeology, history, documentation, the petrological and geochemical analysis of materials and their dating. In the first part, this text will focus on the methodology used and the main results, and in the second part, a reflection on the patrimonial aspects derived from our experience is detailed.

2. Archaeology and History of the Early Mediaeval Churches

As far as the historical-archaeological part is concerned, the project has followed well-defined, spatial analysis models in landscape archaeology [1–3] (p. 16) beginning with an exhaustive compilation of all the information of a textual and material nature regarding churches built prior to the year 1000, or to elements that could be linked to a possible church (toponymic references, archaeological findings, etc.). The result of this work was the creation of a large geo-referenced database or GIS (Geographic Information System) of all the evidence found, with a total of 881 records, see Figure 1. Each of these registers has different levels of detail, from simple references to decontextualized pieces of possible ancient churches, to well documented and conserved constructions. This information

indicates an extraordinarily high density of churches for a period which had been considered to be prior to the consolidation of the parochial system [4]. In addition, the spatial analysis of this distribution allows us to observe a special concentration of early mediaeval churches around the main axes of fluvial communication (especially the rivers Miño and Sil) and the centres of political-religious power of the early mediaeval period in Galicia such as Lugo, Iria-Santiago and Ourense.

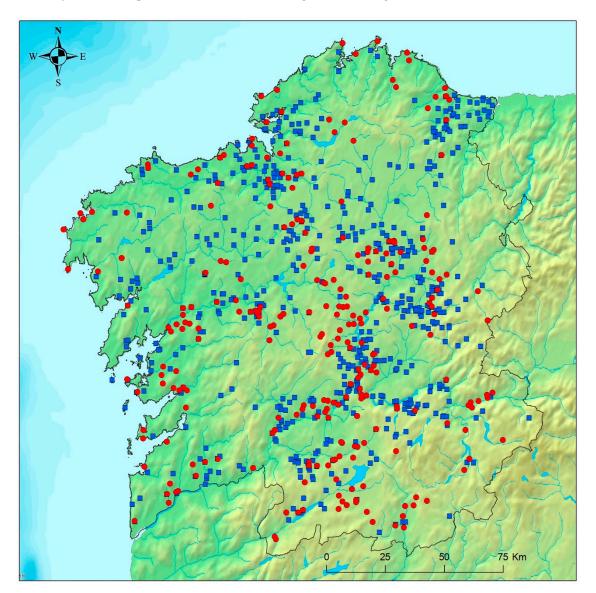


Figure 1. Map of Galicia showing proof of possible churches located though early mediaeval documentary sources published to date. Red circles indicate material evidences and blue squares documentary mentions before the year 1000 AD.

Based on this data, an architectural prospecting process [5,6] of approximately 150 churches was carried out between 2014 and 2016, to detect early mediaeval phases conserved within. The methodology followed the model applied by Sánchez Zufiaurre in Álava [7] but was adapted to Galician territory [8]. Thanks to this research, we could verify that at least 27 of the churches preserve early mediaeval phases, of which eight were unpublished.

Next, 12 churches were selected, considered more representative for studying their construction techniques through stratigraphic analysis. The stratigraphic reading of walls meant we could obtain the construction sequence of the selected buildings, initially relative, so that the different phases and the processes which affected these churches could be dated. This information meant each constructive

element could be placed in the historical context to which it belongs, understanding the origin of these buildings and their evolution and interrelating it with the historical processes of the High Middle Ages in Galicia. The type of record carried out is called stratigraphic reading of fast registration (*lettura veloce*) [9] which is a more synthetic method than the conventional one [10,11], but which does not differ in its stages, which are shown in Table 1.

Table 1. Methodology of work done in the EMCHAHE project in three phases, prospective, analytical and informative.

PROSPECTIVE PHASE	ANALYTICAL PHASE	INFORMATIVE PHASE	
STEP 1: Excavation of documentary sources	STEP 1: Documentation of decontextualized elements	ACTION 1: EMCHAHE Social networks on Facebook	
STEP 2: Establish a Geographic Information System	STEP 2: Geometric documentation of elements and churches	ACTION 2: Participation in national and international congresses, talks and scientific meetings.	
STEP 3: Select study areas	STEP 3: Stratigraphic analysis	ACTION 3: EMCHAHE in the media	
SREP 4: Architectonic research	STEP 4: Analysis of mortars and bricks	ACTION 4: Organisation of international seminars	
	STEP 5: Study of epigraphy	ACTION 5: Organisation of talks of invited researchers.	
	STEP 6: Study of decorative elements	ACTION 6: Plan of publications	
	STEP 7: Petrological analysis of constructive material	ACTION 7: Dissemination amongst local communities	
	STEP 8: Chrono-typological study	ACTION 8: Dissemination on Web pages	
	STEP 9: Territorial analysis		

This simplified system made it possible to streamline field work, which would be unfeasible within the project's timeframe and budget. It had already been used in other buildings in Galicia with good results [12,13]. In the 12 buildings studied, the existing planimetries were used or a photogrammetric survey was carried out to obtain the elevations on which to represent the reading [14]. The selected buildings were San Pedro de Pambre (Palas de Rei), San Estevo da Barcia, Santa Maria de Bermés, San Xoán de Palmou (the three in Lalín), San Martiño de Pazó (Allariz), San Xés de Francelos (Ribadavia), Santa Eufemia de Ambía (Baños de Molgas), Santo Tomé de Tordea (Castroverde), San Martiño de Armental (Sobrado), San Mamede dos Mártores (Valga), San Xulián de Pontecesures (Pontecesures) and the site of A Cidadela (Sobrado). Two further buildings were added and these had been previously analysed by the project team, such as Santa Eulalia de Bóveda (Lugo) [15] and the Basilica de Ascensión and its crypt (Allariz) [14]. In parallel to the stratigraphic analysis and prospecting, and once identified in the phases of the churches which appeared to be clearly early mediaeval, samples of mortars were taken to be dated using OSL (Optically Stimulated Luminescence) and/or radiocarbon (14C) in a total of 21 churches, nine more than those selected for the reading because there were already previous archaeological studies on these: Santa Comba de Bande (Bande) (OSL and ¹⁴C), Santa Comba de Louro (Valga) (OSL and ¹⁴C), San Martiño de Pazó (Allariz) (¹⁴C), San Xoán de Panxón (Nigrán) (¹⁴C), the pre-Romanesque basilicas located under the cathedral of Santiago de Compostela (14C), Santa Eufemia de Ambía (Baños de Molgas) (OSL and ¹⁴C), San Xés de Francelos (Ribadavia) (OSL and ¹⁴C), Adro Vello (O Grove) (14C), Santa María de Mixós (Verín) (OSL), A Cidadela (Sobrado dos Monxes) (OSL and ¹⁴C), San Martiño de Armental (Vilasantar) (OSL and ¹⁴C), San Xoán de Palmou (Lalín) (OSL), San Martiño de Prado (Lalín) (OSL), San Adriao de Amiadoso (Allariz) (OSL), Santo Tomé de Castelo (O Incio) (14C), San Breixo de Ouvigo (Os Blancos) (14C), San Martiño de Mondoñedo (OSL), San Estevo da Barcia (A Estrada) (14C), Santa María de Bermés (Lalín) (14C), San Bartolomé de Rebordáns (Tui) (14C) and the chapel of San Salvador de Samos (Samos) (14C). Pictures of the churches can be seen in Figure 2. As you can see, in six cases, both methods were used to contrast chronologies.



Figure 2. Pictures of some of the churches studied in the EMCHAHE Project.

The combination of stratigraphic analysis and mortar dating has made it possible to advance, especially in the knowledge and dating of early mediaeval construction techniques in Galicia, which until then were quite unknown, and from these, in the understanding of the degree of investment on

the part of founders of these temples, their technological development, the mobility of artisans, etc. These results have been explained in detail in a series of recent publications to which we refer, see Table 2, so here we will just highlight two main results. First, we have detected a clear intensification of church building in Galicia between the second half of the 9th century AD and the first half of the 10th century AD, in correspondence with major political changes like the integration of Galicia into the Asturian-Lion Kingdom [16], even if earlier examples of churches (dating from the 6th and 8th centuries AD) have also been documented. And second, we must underline the great heterogeneity in the construction techniques used during the early middle ages in this region [17].

Church	Obtained Chronology (AD)	Dating Methods	Reference
San Xés de Francelos	773–988	OSL	[16]
Basílica da Ascensión	503–593	OSL	[13]
Santa Eufemia de Ambía	770–1048	OSL	[16]
San Martiño de Armental	894–989	OSL	[17]
Santa Comba de Bande	751–789	OSL, TL and ¹⁴ C	[18]
A Cidadela	967–1098	OSL and 14C	[19]
S. Martiño de Pazó	895–1020	¹⁴ C	[16]
San Breixo de Ouvigo	880–1230	¹⁴ C	[16]
San Xoán de Panxón	890–1015	¹⁴ C	[16]
Santa María de Mixós	818–915	OSL	[16]
San Adrián de Amiadoso	693–923	OSL	[16]
San Martiño de Mondoñedo	862–1473	OSL	[20]

Table 2. Churches studied and dated in the framework of the EMCHAHE project.

In addition to these churches, a specific case was selected to carry out an intensive and interdisciplinary study; the site of A Cidadela (Sobrado dos Monxes), in which the existence of a "Germanic" church or monastery on an ancient fort had been suggested [21–25]. This study also included geophysical prospecting using geo-radar and a mass spectrometer and two archaeological digs carried out in 2016. Part of this work has already been published [19,26].

3. Geology and Geochronology of the Built Heritage

The historical study of the early mediaeval churches through the archaeology of architecture provides fundamental information for reconstructing its constructive evolution, including the replacement of material, reuse of spaces, assignment of new functions, etc. In combination with this study, the use of some of the actual disciplines of geology can be very useful to obtain highly relevant information of a historical and patrimonial nature. To do this, we must observe and study the construction materials, which can help us establish an absolute chronology for the building thus giving us a detailed understanding of the characteristics, composition and origin. The chronology is particularly fundamental for understanding the construction phases which otherwise are difficult to date. Studying construction material in historical buildings allows us to recognise several types, in this project they are mainly stone-related. Ceramics, rocks and mortar are the most used and their geochemical and petrological study allow us to determine their origin whereby they can be compared with other raw materials or material. That is, for instance, we can compare the clays used in brick with raw clays of different areas to assess if any of them are the source of such clays. This implies an awareness of the origin of the raw materials, which can be autochthonous (local) or allochthonous, but also the processing techniques. Cutting and carving a rock with a stratified structure is not like working with one without it, just as a fine-grained rock is not the same as a coarse-grained rock in

its preparation and constructive use. The materials made up of mixtures of raw materials, such as ceramics (bricks, tiles) or mortars mean that the technique used for their preparation can be known: type of mixture, mixed raw materials and proportions, cooking temperature in the case of ceramics, etc. The possibilities that the geological studies have in the early mediaeval churches of Galicia are described below.

3.1. Geomaterial in Early Mediaeval Churches

The construction materials used in early mediaeval Galician churches can be summarised into four types: wood, rocks, ceramic material and binder material. Of these, wood is rarely preserved by the characteristics of the Galician climate so that most has been replaced and does not usually provide information on the oldest phases. Rocks are the main component in the manufacturing of buildings and decorative elements. Identifying and characterising rock gives us very valuable information as this helps us to understand its origin. It is worth considering that almost no buildings of this type are made with a single type of rock but actually with two or more. This is highly relevant as the selection of a rock type is rarely random. Some types of rock are used preferably in foundations (due to their greater hardness and mechanical resistance) and others are preferably used in architectural details (due to their fine grain texture, more suitable for that use, or their colouring). In the same way, the size and shape of the stone blocks used will depend on the structure of the rock. Normally, different types of rock do not coexist in the area where the building stands. Obviously, some rocks are local (they come from the substrate where the building is located) but others are not, so presumably a certain type of rock has been brought from a few or many kilometres away which is more costly for the construction of the building. This is one of the reasons why rock is commonly re-used in these types of architecture.

The ceramic material is basically tiles and bricks although occasionally you can also find some ceramic piping. Interestingly enough, bricks were hardly used during the early mediaeval period in Galicia [15,17,18], just like in South-Western Europe, including Southern England and Western France [27]; although they were widely used in Roman times and also the late medieval era. The causes of this fact are unknown, and there are certain exceptions such as Sta. Comba de Bande in Ourense [18,28], or Sta. Eulalia de Bóveda [15], to name but two. Tiles are more frequent but their use is not homogeneous neither geographically nor temporarily, as in many areas since in many areas of Galicia roofs are made with other rocks such as slate. Dating the older phases of this architecture is more complicated as most of the original ceramic roofs have disappeared during repair and restoration.

Binder materials are particularly interesting. This is mainly mortar of two major types, construction mortar, which would be joint or wall filling, or cladding which includes plaster, rendering and filling etc. Documentation shows mortar used in different positions in the architectonic structures, both for floors and roofs (vaults, domes) or walls. It is difficult for the original coating mortars to be preserved; therefore, it is rare for them to have lasted until now. Joint mortar has provided us with more information. On the one hand, it is more accessible than that for filling walls, on the other, underneath the replacement mortars, a great deal is kept in its original position, as we have seen throughout systematic work in 20 buildings. Interestingly, from the analysis, most of Galicia's early mediaeval buildings have mortar made from soil. On rare occasions, early mediaeval buildings with limestone and sand or original hydraulic mortars are observed [15,28]. From the hydraulic mortars observed, most of them, such as Portland cement mortars, correspond to more recent replacements [15,28]. In fact, the replacement of mortar is somewhat constant whilst a building is used [12,18]. This prevalence of soil mortars [14,17,18] is due to the scarcity of lime in Galicia, since its production requires the use of limestone rocks (scarce and only present in the eastern area) or of shells (mortars that use shells are very scarce, later chronologically and are more frequent on the coast), and for some reason, there was less production in the early mediaeval period. The few studies carried out on these soil mortars indicate that they correspond to local soil, near the building [17]. An important conclusion of this part of the project is the importance and need to preserve these types of mortar, which is not always done when restoring historical buildings since it provides historical, constructive or technological information

and is the best material for dating buildings. As we have already detailed on other occasions, this is created at the exact time of constructing the building, providing the exact date of this action. This mortar has been preserved intact many times in joints, well exposed to the outside, covered effectively by replacement mortars of lime and sand or, more recently, Portland cement, added during repairs and restorations.

3.2. Dating of Early Mediaeval Material

It is not always easy to obtain the chronology of a historical building. On the one hand, most original buildings have been altered by subsequent reforms so the construction phases must be identified to first obtain the stratigraphic sequence and the relative chronology. On the other hand, not all the material is suitable for absolute dating. There are just four applicable geochronology techniques and these have limited use. Wood is one of the most used materials to date, either by ¹⁴C (radiocarbon or carbon-14) or by dendrochronology. Dendrochronology consists of dating timber by comparing the ring sequences to a reference database. This requires conserving the original wood and fragments that have a good sequence of rings, which is not applicable in Galicia as it is not conserved. When conserved, the method is very accurate although it does not provide the age of the building but rather a previous age, that of the cutting of the wood.

Ceramic can be dated fundamentally by luminescence, although occasionally also by ¹⁴C. This technique can only be applied if this material contains some carbon residue, cooking smoke or organic material, which rarely happens. Luminescence allows the cooking time to be dated, so if the material has been specifically cooked to be used in a building, its date will be obtained. Nevertheless, it is frequently re-used in this type of material [15,27] so that we are often unable to date the building in which it has been re-used.

The rocks used in wall manufacturing cannot be dated for an archaeological or historical purpose. However, in recent years, procedures have been developed to date the time when fragments of rocks are extracted from a massif and exposed to light following several complex yet effective procedures using luminescence [29]. This would be more suitable for blocks cut ex novo than those which have been re-used [17] because it would not date the phase in which they were re-used but their previous use. It is also possible to date events of historical interest on rock surfaces using luminescence, such as the use of fireplaces (in furnaces and hearths) and accidental fires [30].

Mortar is the most interesting material for chronology since it is manufactured specifically for the construction of a wall and cannot be re-used. A priori, soil mortar as well as lime and sand or hydraulic mortar can be dated; although, dating procedures involve certain difficulties. Dating in lime and sand and hydraulic mortars is possible through ¹⁴C (using the carbonates of the binder) or luminescence (using the binding sand). Both methods have provided good results, although not 100% of the material is datable. The problem with ¹⁴C is due to the fact that not all the calcium carbonate of the mortar originated whilst it set; many types of mortar have carbonates of geological origin providing very old ages. We must separate both types of carbonates, which is expensive, laborious and difficult, indeed impossible in some cases [31,32]. In luminescence, the quartz of mortar sand is used. The luminescence signal is eliminated with the exposure to daylight during the preparation of the mortar and is generated again while the mortar has set and the aggregate is protected from light. Without quartz, mortar cannot be dated and if the exposure to light has been insufficient, the age obtained will be very old, overestimating the real age of when the mortar was manufactured [32,33].

During the development of the EMCHAHE project, the main materials used for dating were the mortars, mainly by OSL on the quartz but also by ¹⁴C on the organic matter in many cases. It has been seen that approximately 50% of the samples dated by radiocarbon are successful while 80% of those dated by luminescence give reliable results [33]. For this reason, we must note that restoration work must conserve this material scrupulously or, if this is not possible due to structural issues, the restoration process should be monitored to identify the presence of old structures and their mortar and collect a sample under the right conditions to be able to analyse and date it since it provides invaluable

information for the reconstruction of the chronology of a building but also information related to constructive aspects, the origin of the material, etc.

4. Dissemination of Heritage: Rural Churches and Local Communities

Although the EMCHAHE project has focused on the generation of scientific knowledge, from the start, it was deemed important to include an informative phase organised as a series of actions, see Table 1, right-hand column:

- **Action 1:** Dissemination on social networks via a Facebook profile (https://www.facebook.com/EMCHAHE?ref=hl).
- Action 2: Participation in national and international congresses to disseminate project results amongst the scientific community.
- Action 3: Disclosure in the media.
- Action 4: Organisation of international seminars to test the working model and the results obtained.
- Action 5: Organisation of talks of invited researchers.
- Action 6: Plan for the publication of results and some studies focused on specific buildings or specific topics.
- **Action 7**: Dissemination amongst local communities to publicise the results and encourage the active participation of the communities involved with a series of direct activities:
 - O Setting up a panel of preliminary results of the study of the *Forno de Armea* jars, today on display in the small local museum.
 - O Preparation of an informative guide on the church of Mixós (Verín) in collaboration with the Monterrei Cultural Association, Culture and Territory.
 - O Dissemination Conference at the Consello da Cultura Galega.
 - O Numerous interviews and articles in the local radio and press.
- Action 8: Presence of EMCHAHE online (http://projectsjcsanchez.wixsite.com/emchahe), showing the project's objectives, the buildings involved, the work carried out, the results, the equipment, and the dissemination actions.

The churches, one of the characteristic elements of the rural landscape of North-Western Spain, are directly related to the formation of one of the most important and oldest settlement structures of our community, the parish [34,35]. Although there has been a process of rural abandonment since the 1960s and 1970s, and this has accelerated in recent years, the parish as a territorial structure is also made up of a series of villages scattered throughout the territory that, often have their own church or chapel, generating an ecclesiastical structure that is also disperse, following a well-defined model of settlement. The absence of neighbours in these rural areas has led to the abandonment of the churches as places of worship, on the one hand, and as an element of heritage on the other. In spite of this, in many rural areas, the focus of EMCHAHE's work, the churches, continue to be identifying and cohesive elements of local communities, which, in many cases, show a sense of belonging to the ecclesiastical building which goes beyond its function as a place of worship. Although, that sense of belonging does not always remain alive. We can say that we have identified three types of relationship between the church and the local community that have had a direct impact on its state of conservation and that we can show this in three examples:

• Community churches:

This is seen in those churches that continue to use and maintain their worship, although the relationship between the church as a building /community /church as an institution is not always the same. Normally the people in charge of maintaining and preserving these places reside in the parish and are usually women. There is a strong link between the community which lives close to the

church, which they consider as their own, maintaining the traditions (pilgrimages, oral tradition) and the building, collectively dealing with the arrangements and repairs. This is the case, for example, of the Church of San Martiño de Armental (Vilasantar) [17]. In this case, there is a very strong sense of belonging and those in charge of maintenance or who live in the community do so because of a question of religion. In these cases, we have observed two patterns; one where the community has a strong link with the church as a building but not with the church as an institution and one in which the relationship is stronger between the church as a building and the church as an institution than between the former and the community. In this second case, there may well be a greater disengagement from the community, but a neighbour takes on the necessary functions of opening and maintaining the building under the supervision of the church as an institution, as in San Miguel de Eiré (Pantón) or whereby there is good harmony between the church as an institution and the community as is the case in Santa Mariña de Augas Santas (Allariz).

• Monument Churches:

The second type of relationship occurs in buildings that are churches as a monument whereby, in general, worship no longer exists. The church as a building no longer maintains a link with the symbolic aspects of religiosity (nor with its original function), but it can maintain others related to the identity of the community. In general, it is the supra-local institutions that are in charge of its maintenance depending on its protective figure (Xunta de Galicia, Town Hall, . . .). This is the case, for example, of the church of Santa Comba de Bande, a listed asset of Cultural Heritage since being declared as a National Monument by Royal Order in 1921.

• Forgotten Churches:

The third type of relationship occurs where the church as a building no longer maintains worship and the community has broken its religious, identity and heritage links with it (all or some of them). Unfortunately, this type of relationship is increasing with rural areas being depopulated and abandoned. The building loses its original use, is no longer maintained and becomes a forgotten ruin. These processes have either already occurred in the distant past and the churches became a ruin or are quite recent so that their process of deterioration is, to some extent, reversible. A case would be the settlement of San Lourenzo (Pobra do Brollón) and the "oblivion" of the old chapel buried within, where the recovery of the church as a building has been carried out within the framework of an archaeological project which has been promoted and participated in by the local community and the parish, interested in recovering the place as a heritage site, the traditions linked to it and the ruin of the chapel. The second case could be that of the church of Santa Baia de Palio (Lalín), which was in the process of abandonment when we did the prospecting once the worship and the link with the local community were lost. In this case, its inclusion in the Lista Roja de Patrimonio meant that a rehabilitation project was drafted of the proto Roman temple between 2015 and 2016 by the Xunta de Galicia so the building has already been removed from this list. Both cases demonstrate a recovery of historical memory from below and above, whose results we should follow and compare in the future.

5. Conclusions

EMCHAHE has been a complex project with well-defined objectives (enhancing knowledge of early mediaeval Galician churches) and a clear interdisciplinary approach. With the project, the process of knowledge production and the associated methodological process have been enriched. The interdisciplinary approach aims to achieve the greatest possible knowledge about primitive medieval churches by using the necessary methodological tools, even if they come from non-archaeological disciplines.

The results of the project have allowed us to develop abundant methodological lines of work and have opened up new research issues. From a historical and archaeological level, the EMCHAHE project has shown that the density of early medieval churches in this region was higher than believed. A significant number of the studied churches still show late medieval remains, and the number is likely to be greater when the study is increased to other areas of the region.

The geospatial study carried out, supported by GIS, has allowed us to verify that they were mainly concentrated in areas of great political activity during these centuries. This explains why many of them were built at very specific times (mainly between 850–980 AD), and different construction techniques were used depending on the materials and traditions of the areas in which they are located and, possibly, of the founder of the temple.

From the methodological point of view, the used strategy has made it possible to analyse several complex historical buildings in a relatively short period of time. In this sense, the acquired knowledge and experience has been very important in all the facets of research. Likewise, the reflections we make in the final part of Section 4 on the "Dissemination of the heritage, rural churches and local communities" open several lines of work that we can continue in the future.

We could say that the general conclusions obtained so far thanks to EMCHAHE are the following:

- From a methodological point of view, the interdisciplinary strategy and a territorial approach
 has allowed us to maximize the information provided by the churches, to understand them
 within their geographical context, and to carry out comparative studies that allow us to get
 new knowledge in the regional characterisation of construction techniques. In this sense,
 a new hypothesis is opened on the existence of regional tendencies in which we must continue
 working [16].
- Early Medieval construction techniques show an important heterogeneity in Galicia, which does
 not seem to respond, in some cases, to the typological patterns identified to date. Although there
 are recurrent aspects, such as the re-use of construction materials [17] and some architectural
 features, some techniques seem to be older than what was traditionally considered [13]. We
 believe that it is necessary to intensify the systematic research work on construction techniques
 from the data obtained in the project.
- The obtained chronologies for the churches seem to provide three important construction events in Galicia: The 6th Century; the 8th Century; and from the second half of the 9th to the beginning of the 10th Century [14,16,18].
- The churches are one of the characteristic elements of the Galician rural landscape, directly related to the formation of the parish. With their study, we have been able to relate their state of conservation with the relationship between the church as a symbol of the parish and the local community. This reflects, in a certain manner, the transformation of these structures.
- The need to review the interpretative models that have explained medieval architecture to date in Galicia. Is Santa Comba de Bande an earlier or contemporary model of Asturian architecture? What are these three construction moments associated with? How do we interpret regional differences? Is Galicia a peripheral region in this period?

EMCHAHE does not end with EMCHAHE, but has opened up new hypotheses, lines of work and reflections on which we must continue working.

Author Contributions: Investigation, J.S.-S., R.B.-R. and J.C.S.-P.; Methodology, J.S.-S., R.B.-R. and J.C.S.-P.; Project administration, J.C.S.-P.

Funding: This research received no external funding

Conflicts of Interest: The authors declare no conflict of interest.

References

- 1. Criado Boado, F. *Del Terreno al Espacio: Planteamientos y perspectivas para la Arqueología del Paisaje*; Universidad de Santiago de Compostela: Santiago de Compostela, Spain, 1999.
- Hodder, I. Some New Directions in the Spatial Analysis of Archaeological Data at the Regional Scale (Macro). In Spatial Archaeology; Clarke, D.L., Ed.; Academic Press: London, UK, 1977; pp. 233–351.
- 3. Mañana Borrazás, P.; Blanco Rotea, R.; Ayán Vila, X. Arqueotectura 1: Bases Teórico-metodológicas Para una Arqueología de la Arquitectura; Universidad de Santiago de Compostela: Santiago de Compostela, Spain, 2002.

4. López Alsina, F. El encuadramiento eclesiástico como espacio de poder: De la parroquia al obispado. In Los Espacios de Poder en la España Medieval; Iglesia Duarte, J.I., Martín Rodríguez, J.L., Eds.; XII Semana de Estudios Medievales, Nájera: Logroño, Spain, 2002; pp. 425–457.

- 5. Blanco-Rotea, R. Herramientas metodológicas aplicadas al estudio de un paisaje urbano fortificado: El caso de la villa de Verín (Monterrei, Ourense). In *Arqueología Aplicada al Estudio e Interpretación de Edificios Históricos*; Morales, C.M., de Vega García, E., Eds.; Últimas tendencias metodológicas: Madrid, Spain, 2011; pp. 179–197.
- Quirós Castillo, J.A.; Gobbato, S. Prospección y arqueología de la arquitectura. Arqueología Espacial 2004, 24, 185–215.
- 7. Sánchez Zufiaurre, L. Técnicas Constructivas Medievales. Nuevos Documentos Arqueológicos Para el Studio de la Alta Edad Media en Álava; Diputación Foral de Álava: Vitoria, Spain, 2007.
- 8. Sánchez-Pardo, J.C.; Blanco-Rotea, R. Early Medieval Churches. History, Archeology and Heritage (2013–2017). Marie Curie EMCHAHE project. *Eur. Archaeol.* **2014**, *42*, 83–85.
- 9. Brogiolo, G.P. Archeologia Dell'edilizia Storica; Edizioni New Press: Como, Italy, 1988.
- 10. Caballero Zoreda, L. Método para el análisis estratigráfico de construcciones históricas o 'lectura de paramentos'. *Informes de la Construcción* **1995**, 453, 37–46. [CrossRef]
- 11. Caballero Zoreda, L. El análisis estratigráfico de construcciones históricas. In *Arqueología de la Arquitectura*; Caballero Zoreda, L., Escribano Velasco, C., Eds.; El método arqueológico aplicado al proceso de estudio y de intervención en edificios históricos: Salamanca, Spain, 1996; pp. 55–74.
- 12. Blanco-Rotea, R.; García Rodríguez, S.; Mato-Fresán, C.; Sanjurjo-Sánchez, J. La Basílica da Ascensión y Os Fornos (Allariz, Ourense) y la cristianización de la arquitectura en la antigüedad tardía. *Estudos do Quaternario* 2015, 12, 111–132. [CrossRef]
- 13. Mañana-Borrazás, P.; Blanco-Rotea, P.; Sánchez-Pardo, J.C. Fast 3D recording techniques: A low-cost method for the documentation and analysis of scattered architectural elements as part of the EMCHAHE project. In *The three dimensions of Archaeology. Proceedings of the XVII UISPP World Congress (1–7 September 2014, Burgos, Spain)*; Kamermans, H., de Neef, W., Piccoli, C., Posluschny, A.G., Scopigno, R., Eds.; Archaeopress: Oxford, UK, 2016; pp. 99–110.
- 14. Sánchez-Pardo, J.C.; Blanco-Rotea, R.; Sanjurjo-Sánchez, J. Tres arquitecturas altomedievales orensanas: Santa Eufemia de Ambía, San Xés de Francelos y San Martiño de Pazó. *Arqueología de la Arquitectura* **2017**, 14, e062. [CrossRef]
- 15. Blanco-Rotea, R.; Benavides García, R.; Sanjurjo-Sánchez, J.; Fernández Mosquera, D. Evolución constructiva de Santa Eulalia de Bóveda (Lugo, Galicia). *Arqueología de la Arquitectura* **2009**, *6*, 149–198. [CrossRef]
- 16. Sánchez-Pardo, J.C.; Blanco-Rotea, R.; Sanjurjo-Sánchez, J.; González-García, A.C. Cronotipología y datación absoluta de iglesias altomedievales en Galicia. *Primeros resultados del proyecto EMCHAHE. Hortus Artium Medievalium* **2018**, 24, 90–104. [CrossRef]
- 17. Sánchez-Pardo, J.C.; Blanco-Rotea, R.; Sanjurjo-Sánchez, J.; Barrientos- Rodríguez, V. Reusing stones in medieval churches: A multidisciplinary approach to San Martiño de Armental (NW Spain). *Archaeol. Anthropol. Sci.* 2018, 10. [CrossRef]
- 18. Sánchez-Pardo, J.C.; Blanco-Rotea, R.; Sanjurjo-Sánchez, J. The church of Santa Comba de Bande and early medieval Iberian architecture: New chronological results. *Antiquity* **2017**, *91*, 1011–1026.
- Blanco-Rotea, R.; Costa García, J.M.; Sánchez-Pardo, J.C. Análisis de la evolución constructiva de las estructuras excavadas en el yacimiento de A Cidadela (Sobrado dos Monxes, A Coruña) y propuestas interpretativas sobre sus 'fases tardoantiguas'. Estudos do Quaternario/Quat. Stud. 2015, 12, 69–93. [CrossRef]
- 20. Sánchez-Pardo, J.C.; Castiñeiras López, J.; Sanjurjo-Sánchez, J. Arqueología y arquitectura de San Martiño de Mondoñedo (Foz, Lugo). Revisión crítica y nuevas aportaciones. *Quintana* **2018**, *17*, 351–375.
- 21. Caamaño Gesto, J.M. Excavaciones en el campa-mento romano de Cidadela (Sobrado dos Monxes. Coruña). Memoria preliminar de la campaña de 1981. *NAH* **1984**, *18*, 233–254.
- 22. Caamaño Gesto, J.M. La cohors I Celtiberorum y su campamento de Cidadela (Sobrado dos Monxes—Coruña). *Cuadernos de Estudios Gallegos* **1987**, XXXV, 71–78.
- 23. Caamaño Gesto, J.M.; Fernández Rodríguez, C. Excavaciones en el campamento de Cidadela (A Coruña). *Brigantium* **2002**, *12*, 199–207.
- 24. Costa García, J.M. Las primeras intervenciones arqueológicas en A Cidadela (Sobrado dos Monxes, A Coruña). *Gallaecia* **2014**, *32*, 109–127. [CrossRef]

25. Costa García, J.M.; Varela Gómez, D. A Cidadela después de Roma. Introducción al estudio del yacimiento y su entorno durante el período medie-val. *Gallaecia* **2011**, *30*, 181–194.

- 26. Sanjurjo-Sánchez, J.; Arce Chamorro, C.; Alves, C.; Sánchez-Pardo, J.C.; Blanco-Rotea, R.; Costa-García, J.M. Using in situ gamma ray spectrometry (GRS) exploration of buried archaeological structures: A case study from NW Spain. *J. Cult. Herit.* 2018, 24, 247–254. [CrossRef]
- 27. Blain, S. An application of luminescence dating to building archaeology: The study of ceramic building materials in early medieval churches in north-western France and south-eastern England. *Arqueología de la Arquitectura* 2010, 7, 43–66. [CrossRef]
- 28. Agudo, M.A.U.; Sáinz, F.A.; Zoreda, L.C. La iglesia de San Torcuato de Santa Comba de Bande (Orense). Arqueología de la Arquitectura. *Archivo Español de Arqueología* **2004**, 77, 273–318. [CrossRef]
- 29. Liritzis, I.; Singhvi, A.K.; Feathers, J.K.; Wagner, G.A.; Kadereit, A.; Zacharias, N.; Li, S.H. Luminescence Dating in Archaeology, Anthropology, and Geoarchaeology: An Overview; Springer: Heidelberg, Germany, 2013.
- 30. Sanjurjo-Sánchez, J.; Gómez-Heras, M.; Fort, R.; Álvarez de Buergo, M.; Izquierdo Benito, R.; Bru, M.A. Dating fires and estimating the temperature attained on Stone surfaces. The case of Ciudad de Vascos (Spain). *Microchem. J.* 2016, 127, 247–255.
- 31. Heinemeier, J.; Ringbom, A.; Lindroos, A.; Sveinbjörnsdóttir, A.E. Succesful AMS 14C dating of non-hydraulic lime mortars from the medieval churches of the Aland Islands, Finland. *Radiocarb* **2010**, *52*, 171–204. [CrossRef]
- 32. Sanjurjo-Sánchez, J. Dating historical buildings: An update on the possibilities of absolute dating methods. *Int. J. Archit. Herit.* **2016**, *10*, 620–635. [CrossRef]
- 33. Goedicke, C. Dating historical calcite mortar by blue OSL: Results from known age samples. *Radiat. Meas.* **2003**, *37*, 409–415. [CrossRef]
- 34. Torres Luna, M.P.; Lois González, R.C. A parroquia e a xeografía de Galicia. In *A Parroquia en Galicia*; García Pazos, F., Ed.; Pasado, presente e future: Coruña, Spain, 2009; pp. 19–54.
- 35. Sánchez-Pardo, J.C. Organización eclesiástica y social en la Galicia tardoantigua. Una perspectiva geográfico-arqueológica del parroquial suevo. *Hispania Sacra* **2014**, *LXVI*, 439–480.



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